acquiring an image of the object illuminated by said at least two illumination lights by acquisition of a image pick-up gain having faster changing rate than a changing rate of the intensity of the illumination lights, wherein the image of the object is acquired a plurality of times by an image pick-up element having storage effect; and

detecting a distance between individual points of the object on the basis of the image obtained; wherein

the distance between respective points of the object is detected at a speed at which three-dimensional information is followed real time within a period of time corresponding to a frame of a video signal.

15. (NEW) A method of detecting three-dimensional information, comprising:

illuminating an object sequentially with at least two illumination lights, at least one of the first or second of the two illumination lights with an intensity that varies with time;

acquiring an image of the object illuminated by said at least two illumination light by acquisition of the given level of a image pick-up gain with shorter changing cycle than a changing cycle of the intensity of the illumination light, wherein the image of the object is acquired a plurality of times by an image pick-up element having storage effect; and

detecting a distance between individual points of the object on the basis of the image obtained; wherein

the distance between respective points of the object is detected at a speed at which three-dimensional information is followed real time within a period of time corresponding to a frame of a video signal.

16. (NEW) A method of detecting three-dimensional information, comprising:

illuminating an object with an illumination light;

acquiring an image of the object illuminated by the illumination light by acquisition of at least two image pick-up gain, at least one of said image pick-up gain changing with time, and the image pick-up gain having slower changing rate than a changing rate of the illumination light, wherein the image is acquired a plurality of times by an image pick-up element having storage effect; and

detecting a distance between individual points of the object on the basis of the image obtained; wherein

the distance between respective points of the object is detected at a speed at which three-dimensional information is followed real time within a period of time corresponding to a frame of a video signal.

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17. (NEW) A method of detecting three-dimensional information, comprising:

illuminating an object with an illumination light;

acquiring an image of the object illuminated by the illumination light by acquisition of at least two image pick-up gain, at least one of said image pick-up gain changing with time, and the image pick-up gain having slower changing cycle than a illuminating time of the illumination light with given level of intensity, wherein the image of the object is acquired a plurality of times by an image pick-up element having storage effect; and

detecting a distance between individual points of the object on the basis of the image obtained; wherein

the distance between respective points of the object is detected at a speed at which three-dimensional information is followed real time within a period of time corresponding to a frame of a video signal.

18. (NEW) The method of detecting three-dimensional information as defined in claim 14, wherein

a first and a second optical images of the object illuminated by the first and the second illumination light are formed;

the first and the second optical images are obtained alternately by acquiring the first and the second optical images with a single image pick-up gain over a given period of time;

the first and the second images obtained are stored; and

the distance between respective points of the objects are detected by each of the first and second images and are detected sequentially for each frame of the video signal.

19. (NEW) The method of detecting three-dimensional information as defined in claim 15, wherein

a first and a second optical images of the object illuminated by the first and the second illumination light are formed;

the first and the second optical images are obtained alternately by acquiring the first and the second optical images with a single image pick-up gain over a given period of time;

the first and the second images obtained are stored; and

the distance between respective points of the objects are detected by each of the first and second images and are detected sequentially for each frame of the video signal.

20. (NEW) The method of detecting three-dimensional information as defined in claim 14, wherein the intensity of the first illumination light is increased or decreased with time, and the second illumination light has a given intensity.

21. (NEW) The method of detecting three-dimensional information as defined in claim 14, wherein the intensity of the first illumination light is increased with time, and the second illumination light is decreased with time.

22. (NEW) The method of detecting three-dimensional information as defined in claim 15, wherein the intensity of the first illumination light is increased or decreased with time, and the second illumination light has a given intensity.

23. (NEW) The method of detecting three-dimensional information as defined in claim 14, wherein the intensity of the first illumination light is increased with time, and the second illumination light is decreased with time.

24. (NEW) The method of detecting three-dimensional information as defined in claim 16, wherein

first and second optical images of the object illuminated by first and second illumination light which illuminate with single intensity over a predetermined period of time, are formed;

first and second images are obtained alternately by acquiring the first and second optical images with first and second image pick-up gains, the first and second images obtained are stored; and

the distance between respective points of the object is detected from the first and second images which are detected sequentially for each frame of the video signal.

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25. (NEW) The method of detecting three-dimensional information as defined in claim 17, wherein

first and second optical images of the object illuminated by first and second illumination light which illuminate with single intensity over a predetermined period of time, are formed;

first and second images are obtained alternately by acquiring the first and second optical images with first and second image pick-up gains, the first and second images obtained are stored; and

the distance between respective points of the object is detected from the first and second images which are detected sequentially for each frame of the video signal.

26. (NEW) The method of detecting three-dimensional information as defined in claim 16, wherein the first image pick-up gain changes with time, and the second image pick-up gain is uniform.

27. (NEW) The method of detecting three-dimensional information as defined in claim 16, wherein the first image pick-up gain is increased with time, and the second image pick-up gain is decreased with time.

28. (NEW) The method of detecting three-dimensional information as defined in claim 17, wherein the first image pick-up gain changes with time, and the second image pick-up gain is uniform.

29. (NEW) The method of detecting three-dimensional information as defined in claim 17, wherein the first image pick-up gain is increased with time, and the second image pick-up gain is decreased with time.

30. (NEW) A device for detecting three-dimensional information pertaining to an object comprising:

a projection section projecting illumination light having given intensity on the object;

an image pick-up section acquiring an image of the object with a given image pick-up gain;

a storage section temporary storing the image acquired by the image pick-up section; and

a signal processing section which calculates a distance between respective points of the object on the basis of intensity level information included in a video signal output from the image pick-up section,

wherein the distance between respective points of the object is detected at a speed at which the three-dimensional information are followed real time within a period of time corresponding to the frame of a video signal.

31. (NEW) The device for detecting three-dimensional information as defined in claim 30, wherein the projection section comprises:

a laser diode or a light-emitting diode whose light is modulated in accordance with an electric signal, and

a modulator capable of modulating light emitted from the laser diode or the light-emitting diode.

32. (NEW) The device for detecting three-dimensional information as defined in claim 30, wherein the image pick-up section comprises:

imaging means for producing an optical image upon receipt of light reflected from the object;